Transportation Asset Management International Scanning Tour

United Kingdom, London – Wednesday, April 20, 2005

London – Highways Agency

Background
Basic facts - http://www.cia.gov/cia/publications/factbook/geos/uk.html

Highways Agency - *http://www.highways.gov.uk/ (homepage)*

Presentations

Welcome and Outline of Program - Mark Neave (HA) – Research and International Coordinator

Asset Management – Government Initiatives and Requirements - Ian Holmes – Department of Transport, Head of Highway Maintenance

Local Authority Perspective - Matthew Lugg – Director of Sustainable Infrastructure, Cambridgeshire County Council, Chair UK Roads Board, Chair of the CSS Highway Management Committee, Chair of the CSS Asset Management Working Group, Chair of the Cambridgeshire ICE Branch

Transport Asset Management in the UK - Paul Hardy – Opus International Consultants (UK) Ltd

Implementation of asset management of London's main roads
Dana Skelley – Head of Central Transport for London, Transport for London

Network Rail/ London Transport - Steve Fawcett

Collaborative Research on Asset Management – Whole life infrastructure asset management excellence across industries - Das Mootanah – CIRIA - Construction Industry Research and Information Association

Highways Agency Asset management – Road Pavements - Les Hawker

Highway bridges and structures - Gerry Hayter

The Maintaining Contractor's Perspective - Peter King - Halcrow

Observations – Local Roads
The responsibility for local roads lies with 150 local authorities. There are 32 in London. Funding comes through the Highways Agency.

Local Assets

- 275,000 km ranging from motorway to single track
- 65,000 bridges
- 4.7 million lighting columns
- Value £700 b - $US 1,275 b

Features

- Universal service
- Vital to delivery of other services
- Duty to maintain (1825 statute)
- Local Transport Plans (LPT[1])[2],[3] (used to obtain local funding from DOT) show 3988 bridges need strengthening, 2844 need major maintenance
- Commitment (political and professional) (maintenance was simply what was left after the construction)
    - Plan strategically
    - Plan for outcomes
    - Plan together (officers, members, users[4])
- Methodology
    - Inventories (required by legislation)[5]
    - Condition indicators
- Work is in cooperation with professional organization (CSS and LondonTAG). Provide professional advice on asset management including publication of guidance.

The level of sophistication varies signicantly. Transport for London (TfL) Streets is responsible for "main" roads (red routes – designated by red edge lines). TfL has AIMS (Asset Inventory and Management System)

- Data
    - Network, boundaries, 59 types of assets, 10-15 attributes for each type, spatial accuracy 1m, condition information, accident data, historic and live data
    - Inventory –
        - E.g understand implications of objectives – BVPI 165
        - National standards
- GIS with database (by Exor)
- Mapping

[1] 5 year plans – used as input to DfT 10 year plan

[2] See Devon (http://www.devon.gov.uk/dltp_2001chapter1.pdf), Kent (http://www.kent.gov.uk/travelling/local-transport/downloads/ltp-apreport-2001-6.pdf) , Durham, Birmingham, Gateshead, Hammersmith-Fulham for examples

[3] See http://www.dft.gov.uk/stellent/groups/dft_localtrans/documents/divisionhomepage/030752.hcsp for guidance on producing LTPs

[4] Required by Local Government Act 2000 - http://www.hmso.gov.uk/acts/acts2000/20000022.htm .

[5] Feeds into PMS. Trying to encourage locals to use the data and the UK PMS. ~30-40% are using PMS to help management. 30-50% partially using PMS. http://www.ukpms.com/index.asp

    - E.g. condition index for UKPMS (use own team of inspectors (5 people) – leads to better consistency)
    - Distribution of condition
    - Change in condition
    - Distribution of bridge condition to explore impact of work
- Document Management Facility
- UKPMS
- Modeling
    - Best value performance indicators
    - Project prioritization
    - Modeling for business planning and asset maintenance
        - Road, carriageways and footways – 15-20 years forward planning
            - Objectives – test spending scenarios e.g. clear the backlog by 2011
            - Attain a steady state good repair and retain at that level
            - Optimum spending
            - Assumptions/Verification
                - Type of treatment (UKPMS)
                - Average costs
                - Proportion funds targeted at different classes
                - Life cycle costs
            - Uses
                - Spending profile to clear backlog and keep the network at acceptable level (£35m per year)
                - "Optimum" versus alternative plan – hard to explain but "scientific"
        - Lighting condition – model under development
        - Bridges – Phase I – theoretical model, Phase II – link with BCI
        - Actual projects and improvements are input into the model.
    - Fund redistribution
    - Valuation of assets

Business Planning – project managers kit – called SPEARMINT

Observations – Network Rail

Data

- 40,000 bridges (categorized by importance)
    - 26,000
    - 14,000
- 25,000 km of major earthworks
- 700 tunnels
- 23,000 culverts
- 17,000 retaining walls
- 177 sea defences

Process and Decision Support Tools

- Structures Engineering Policy

- Structures Annual cost profile (SACP)
    - Policy definitions and guidelines
    - Establish how revised policy definitions can be modeled within SACP and STAMP
    - Establish issues associated with a minimum maintenance approach – consider how to model the deterioration of bridge structures
    - Cost out
        - Policy A – return and maintain stock to steady state (good practice)
        - Policy B – allow structures to deteriorate until repairs are essential to maintain operations
        - Policy C – Allow structures to deteriorate until intervention is essential to maintain safety standards
- New Structures standards
- Structures condition marking index (SCMI)
    - Trained artisans
    - Labels structure in a consistent format
    - Score 0-100 rather than good, fair, poor
    - Largest proportion of bridges is between 60 and 80. Provides a profile for benchmarking.
    - 500 inspectors, audited annually
- Structures Asset Management Programme (STAMP)
    - Used to look at whole life management on specific bridges
- Management Process (T-shirt diagram)
    - HQ – establish policy, define standards, financial management, audit, regulator Reporting
    - Management and Control Procedures
    - Steady State Management
        - Detailed inspection every 6 years (£1000 ea)
        - Visual inspection every year
        - Also used strength
    - Optional Appraisal
    - Intervention

Observations – Highway Agency

HA Network Summary

- 4440 miles motorways
- 5425 miles APTRs (all purpose truck roads)
- 4% of England's network length
- Carries 25% of traffic
- 50% HGV traffic
- Total budget £5.5 b
- £850m for road maintenance
- Organizational structure
    - 4 traffic operations regions
    - 14 operational areas

    - Move some functions from police to traffic management (incident clearance)

Aim and Objectives: Safe roads, reliable journey, informed travelers

Objectives:

- To deliver a high quality service to all our customers by
    - Reducing congestion and improving reliability
    - Improving road safety
    - Respecting the environment
    - Seeking and responding to feedback form our customers
- To ensure more effective delivery through better working relationships
- To implement best practice and innovative solutions to improve service now and in the future
- To be a good employer
- To be an efficient agency with effective business processes and resource management systems

Does not include asset management explicitly. Assumes that the agency is already good at asset management. (There is no asset management plan.) No longer want to be known as an asset manager – traffic manager. No backlog of maintenance on network. Constant level of funding required to maintain the network in steady state.

AM Indicative Processes

- Strategic plans (3-5 years horizon)
- Budget Rounds
    - Databases
        - HAPMS
        - SMIS
        - HAGDMS
        - NOMAD
        - HA-ES
        - HATRIS
- Forward Plans
    - Route management
    - Feasibility Assessment
    - Project Development
    - Constraints
- VM Process / Budget allocation
- Program Delivery
- Network Performance
- Asset valuation

Most work is by contract –
Old model – local authority took care of the highway authority roads.
Changes in the "contractor" role:

- Client, consultant, contractor (Direct Labor Organization) in house (ended in 86)
- Client, consultant in house, external contractor
- Client, contractor in house, external consultant
- Consultant and contractor external – consultant and contractor report independent to client (Gershon 04 suggesting DLO may be appropriate again)
- Consultant and contractor in partnership
- Client, consultant and contractor in partnership
- Consultant and contractor joint venture

Consultant Tasks

- Feasibility studies
- Pavement investigation, site investigation
- Design major road schemes
- Design maintenance schemes
- Supervision of works
- Inspection of structures
- Advice on contract documentation, specifications
- Street lighting
- Environmental issues
- Transportation studies
- Noise studies

Contractor Tasks

- General reactive ad hoc maintenance
    - Emergency repairs, RTA's, Debris collection, Drain clearance
- Winter Maintenance
- Grass cutting and verge maintenance
- Surface dressing and resurfacing
- Road marking
- Gully cleaning
- Structures

Pictures

Larry and Paul listen intently

Dennis and Kirk listen to the discussion.

Our co-chairs and Les Hawker

The team at Highways Agency meetings

NOTE: This is a "WORK-IN-PROGRESS." Please treat it as such and do not quote or attribute without permission from the Scan Team.